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Growing Cabbage Plants in Seedbeds

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It is best to use home-grown cabbage plants to set the Florida crop. Imported plants may not be true as to variety, and some shipments dry out or became heated while in transit. They also may be infested with aphids and caterpillars and affected with black rot and other diseases. Strong plants free of the worst diseases and insects can be produced in properly managed plant beds in Florida, except when torrential rains destroy the seedbeds.

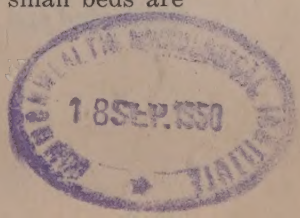
About two-thirds of the cabbage acreage in Florida is set with plants grown in seedbeds and the rest, including almost all of the crop in the Everglades, is started from seed sown in the fields, the plants being thinned to a stand.

Production of Plants

Location and Types of Seedbeds.—Loose, well-drained marl, muck and sandy soils are suitable for growing plants. Avoid low spots which flood during heavy rains and high, dry sandy spots.

Plants are grown in narrow or wide, raised beds and in flat beds, depending on the kind of drainage needed to prevent flooding. Narrow beds, 12 to 18 inches wide on top and 8 to 10 inches high, are used on flatwoods soils in the Hastings area where natural drainage is poor. On better drained soils plants are grown on the level or in beds three to five feet wide and four to six inches high.

Preparation of Soil.—It is a good practice to plow under weeds and cover crops three to four weeks before seeding to allow plenty of time for their decomposition. Disk the soil once or twice before fertilizing it to cut the plant debris into smaller pieces so that it will not interfere with seeding. Raised beds are made up best with a tractor. If only a few small beds are needed they may be made by hand.



Fertilization.—Fertilizers containing four to six percent nitrogen, five to eight percent phosphoric acid and four to eight percent potash are used at 500 to 1,500 pounds per acre in growing plants in marl and sand. Fertilizers used on marl are supplemented with 15 pounds manganese sulfate per ton. Muck usually is treated with 400 pounds per acre of an 0-8-16 fertilizer fortified with 25 pounds manganese sulfate, 15 pounds copper sulfate, 15 pounds zinc sulfate and 10 pounds borax per ton. Fertilizer is drilled in bands in low, narrow beds which are then made up to a height of eight to 12 inches, leaving the fertilizer two to three inches below the surface. It is drilled or broadcasted on the surface of wide and flat beds and mixed with the top two to three inches of soil.

When heavy rains leach the fertilizer and the plants turn yellow or red and grow slowly, side-dress with some form of available nitrogen; nitrate of soda and nitrate of potash usually are preferred. Drill the fertilizer evenly between the rows of plants or broadcast it uniformly on the bed at the rate of 50 to 75 pounds per acre if the plants are less than one-third grown. On larger plants, 200 pounds of nitrate of soda can be used per acre when the plants are dry and the material is well scattered. The treatment is repeated when needed, but too much nitrogen will make the plants spindling and tender.

If preferred, nitrogen can be applied in liquid form by dissolving two ounces of nitrate of soda or nitrate of potash in four gallons of water and sprinkling it on 200 square feet of bed.

Planting Seed.—Seedbeds are planted from July to February, mostly in September and October. Plants of the right size for transplanting are produced within four to five weeks during the early part of the season, but six to eight weeks are needed when seed are sown in November or later, as plants grow more slowly in cooler weather. Beds planted before September 15 are shaded in some localities to protect the plants from the heat. Thereafter, cooler weather makes shading unnecessary.

A common seeding rate is 1 ounce of seed to 100 feet of row. Thus, 16 pounds of seed are needed to plant an acre of 2-row (narrow) beds; 1.5 pounds to plant a wide bed (4 ft. x 300 ft.) in drills six inches apart across the bed; and 27 pounds to plant an acre of flat bed in drills one foot apart. Most growers use one pound of seed to produce plants to set an acre, although six ounces are enough when growing conditions are favorable.

Rake, roll or board-off the beds to make a smooth surface for seeding. Seed is broadcasted and raked into the soil or sown in drills lengthwise or crosswise of wide beds. Short drills are opened with a marker and planted and covered by hand. Long drills are planted and covered with a hand-seeder, or with seeders mounted on a tractor. Seed is planted ⅛ to ¼ inch deep in moist sand and marl and ½ to ¾ inch in muck. Drill rows are

spaced three to five inches apart in narrow beds, four to eight inches apart in wide beds and 10 to 14 inches apart in flat beds.

Drainage and Irrigation.—Good drainage is important. Protection against all but the heaviest rains can be secured by using enough field drains, water furrows, ditches and canals to remove water rapidly from the seedbeds. Mole drains are used under seedbeds in muck soils and surface and tile drains in sand and marl.

Water should be available for irrigation. Beds are irrigated with sprinklers, by filling subsurface drains with water or by running water in water furrows and alleys between beds. If the soil is dry, water it before seeding and then irrigate when needed to keep the surface moist and thus promote uniform germination of the seed and rapid growth of plants. Avoid water-logging the soil by overirrigation.

Cultivation.—Seedbeds are cultivated to kill weeds and to aerate the soil after rains. Hand weeders are used between plant rows or the beds can be cultivated and weeded with tractor-drawn cultivators if the plant rows are properly spaced. Plow out alleys between beds when needed to maintain drainage and kill weeds. Weeds on edges of raised beds may be scraped off with a hoe and those in the plant rows pulled by hand. Soils containing much clay should not be cultivated when wet.

Pulling Plants.—If the soil is dry and hard when plants are pulled, watering will prevent excessive root breakage and protect plants left in the bed. Sometimes all plants are pulled when most of them are large enough for transplanting. In that case, the soil is loosened about the plants and all are pulled, the small ones being discarded.

Control of Diseases

Black Rot.—Any lot of cabbage seed which is not known to be free from the black rot organism should be soaked in water held at 122° F. for 25 minutes (cauliflower and broccoli, 18 minutes). Use an accurate thermometer and hold the temperature within 1° F. of that specified to control the disease without injuring the seed. Fill a cheesecloth bag two-thirds full of seed, tie the top, immerse it in the hot water and then stir it enough to remove the air. After treatment, dip the seed in cold water, drain and spread them in a thin layer to dry.

Use new land for seedbeds or old land in which cabbage or other cruciferous crops have not been grown for two years.

Do not use plants from a plant bed in which black rot has been found.

Downy Mildew and Alternaria Leaf Spot.—Dust plants two to three times each week with 12% spergon dust or spray them with spergon wettable (4 lbs.-100 gals. water). Use 10 to 30 pounds of dust or 60 to 150 gallons of spray per acre in narrow

and level beds, and 1 to 3 pounds of dust or 6 to 15 gallons of spray per 100 square yards in wide beds, depending upon size of plants.[1]

Damping-off.—Losses due to damping-off of young seedlings can be reduced by (1) rotation of seedbeds, (2) use of well-drained soil, (3) seed treatment with arasan or semesan and (4) cultivation after heavy rains to promote aeration of soil.

Control of Insects

Mole-Crickets, Grasshoppers and Banded Cucumber Beetles.—For mole-cricket control, treat seedbeds and irrigation ditches two to three days before planting seed with chlordane spray (¼ pt. of 50% emulsion or ½ lb. of 50% wettable in 100 gals. water) at the rate of 100 gallons per 1,000 square feet. A 5% chlordane dust also is effective when applied at 100 pounds per acre. Use the dust on wet soil or water it in if the soil is dry.

If grasshoppers and banded cucumber beetles attack the plants, apply 5% chlordane dust or chlordane spray (2 lbs. of 50% wettable in 100 gals. water) at 60 to 150 gallons per acre. One treatment should be sufficient, but presence of the insects will determine necessity of additional applications.

Cutworms, Caterpillars and Armyworms.—If cutworms are present in the soil, dust the seedbed before planting with 30 to 40 pounds of 5% DDT dust, and if the plants are attacked apply 5% DDT dust at the same amount recommended for spergon.

A 3% DDT dust or DDT spray (1 qt. of 25% emulsion or 2 lbs. of 50% wettable in 100 gals. water) will control caterpillars and armyworms when applied as soon as the plants are up to a stand and repeated at 10-day intervals at 10 to 30 pounds per acre.

Aphids.—DDT spray containing 1 quart of 25% emulsion in 100 gallons of water will control aphids. Start spraying when aphids appear and repeat the treatment once a week, using 60 to 150 gallons per acre.

A 3% fixed nicotine dust and nicotine spray (3 lbs. of nicotine concentrate plus 2 or 3 ozs. of spreader to 100 gals. water) also are recommended. The dust and spray are prepared with 14% chemically fixed nicotine concentrate. They are effective in cool weather. In hot weather use a 3% activated nicotine dust, applying it at the rate of 30 to 40 pounds per acre.

Since DDT, chlordane and nicotine are compatible with spergon, it is not necessary to apply the insecticides separately when plants are being treated for control of mildew, as the proper amount of each needed, except activated nicotine, can be used with spergon spray or dust.

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[1] For further directions, see Fla. Agr. Exp. Sta. Press Bul. 633.